

## Level of Adequate Reserves

### Assumptions:

1. Reserves must be the responsibility of the load serving entities (LSE).  
*The ISO agrees. This assumption is consistent with the ISO's MD02 filing.*
2. Reserves must be from identified power plants or demand reserve programs.  
*The ISO does not necessarily agree. First, with respect to out-of-state resources, except those under ISO's direct control through dynamic scheduling, the ISO believes that such resources do not have to be unit or resource specific since it is the host control area's responsibility to provide reserves for any such interchange transactions. Moreover, even with respect to in-state (or in control area) resources, the ISO believes that load-serving entities may be able to procure (and suppliers may be permitted to offer) a "portfolio" of reserves in the month-ahead (or longer-term) timeframe. However, the ISO does agree that for day-ahead scheduling purposes, specific resources must be identified. The approach outlined above is consistent with the ISO's MD02 filing.*
3. The LSE must have a firm contract right to call on the reserves when needed.  
*The ISO agrees. However, the firm contract right is on the capacity, and may or may not include a contracted price for energy depending on preferred contractual arrangements between the LSE and the supplier. The LSE may be able to obtain cheaper capacity in return for willingness to pay energy MCP when the resource is called upon to produce energy. This assumption is consistent with the ISO's MD02 filing.*
4. Power plants that are not under firm contract to California LSE's shall not be counted as part of our reserves.  
*The ISO agrees, subject to the caveats regarding out-of-state resources and in state "portfolios" outlined above. This assumption is consistent with the ISO's MD02 filing.*
5. Adequate level of reserves are made up of two elements:
  - Reliability reserves and
  - "Market Control" reserves (or planning reserves)  
*Reliability reserves, or contingency reserves, are a necessary component in the maintenance of adequate Control Area and Interconnection reserve levels. Contingency reserve is the element of a Control Area's reserve resource picture that allows the Interconnection to recover from the contingency loss of a large generating unit or major transmission line or path. For long term resource planning, the adequate level of reserves*

*should take into consideration system reliability in order to ensure that the ISO complies with the Western Electricity Coordinating Council's (WECC) Minimum Operating Reliability Criteria (MORC) requirements. Historically, utilities procured 15-18% of planning reserve above the expected peak load demand.*

*In your assumption, the word "reserves" seems to refer explicitly to the margin above the amount of energy needed to meet load. Historically, the purpose of reserves was to ensure a certain level of reliability, i.e., continuity of service to customer load, and this should continue to be a primary purpose of reserves. For example, as stated in the ISO's filed comments to the CPA, the ISO supports adoption of a minimum reserve level necessary to ensure ISO compliance with the WECC MORC requirements. However, the ISO recognizes that the state, as a general policy matter, could adopt a higher reliability standard to be considered when developing a requirement for adequate reserve level.*

*With respect to the second element, the ISO is unsure as to what is meant by "Market Control" reserves. If "Market Control" reserve refers to the level of reserves necessary to assure a competitive market, I respond to that issue below. As a general matter, the ISO agrees that reserves can serve multiple purposes (i.e., both reliability and market needs).*

6. Reserves needed for reliability purposes shall be a percentage of net dependable capacity minus forced outages.  
*The ISO agrees. This assumption is consistent with the ISO's MD02 filing.*
7. Additional reserves needed to assure a competitive market depend on the percent the spot market is of the entire load. If advance contracts cover 95% or more these reserves can be small. If the near time market is larger these reserves must be sizeable.  
*The meanings of the above statements are not entirely clear. However, the ISO recommends that a clearly defined reserve level should be established from a long-term resource planning perspective. Also, it appears from your statement "If advance contracts cover 95% or more these reserves can be small" that the term "reserves" is being incorrectly equated to real-time operating reserve requirements. Minimum reserve requirements are established by the WECC MORC and are not open to interpretation or modification by the CAISO – they establish a minimum standard, and the CAISO can only comply by meeting or exceeding this standard. For informational purposes, the WECC MORC operating reserve requirement is currently the greater of the sum of 7% of Control Area load served by thermal generation plus 5% of Control Area load served by hydroelectric generation, or the Control Area's most severe single contingency (MSSC). In either of these cases, half of that reserve must be synchronized to the grid, or "spinning".*

*Assuming on the other hand that your use of the word reserves refers to the “Market Control” reserves referenced above, the ISO agrees that a target reserve level could be adopted that is in part based on the amount of capacity necessary to assure competitive market outcomes. That is, a long-term planning reserve level that would assure that sufficient resources are on line and available in the real-time or day-ahead markets to support competitive market outcomes. The ISO notes however that the resolution of certain issues, such as market concentration and the impact of transmission constraints, also bear on the competitiveness of the market.*

*It may be worthwhile to note that based on preliminary studies by ISO’s DMA, in the absence of disproportionate market concentration and locational dispersion of capacity reserves, the level of reserves based on the traditional long-term reliability criterion of one-day-in-ten-years LOLP (loss of load probability) is adequate to ensure that individual suppliers would not be pivotal frequently enough to be able to raise the market prices substantially above just and reasonable levels beyond accepted thresholds (10% of competitive baseline on an annual basis).*